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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,435	03/27/2001	Thomas G. Mason	RDH0006	2059

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EXAMINER

NORTON, NADINE GEORGIANNA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/818,435

Applicant(s)

MASON ET AL.

Examiner

Nadine Norton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2003.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1 and 14 is/are rejected.
- 7) ☒ Claim(s) 2-10, 13 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Withdrawal of Claim Rejections - 35 USC § 112 1st*

Applicants' amendment in paper no.6, filed 2-25-03, is sufficient to overcome the previous rejection of claims 11 and 12.

### *Claim Rejections - 35 USC § 112 2nd*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 stands as being indefinite because it is unclear how the claim can depend on both claims 12 and 13. The multiple dependency makes the specific cumulative combination of limitations unclear.

Note: Applicants are not persuasive in arguing that the claim as written is not indefinite. In support of the office's position applicants are referred to MPEP Section 608.01 (n) which addresses the topic of multiple dependent claims. The MPEP section refers to 37 CFR 1.75 which includes the following language "Any dependent claim which refers to more than one other claim ( "multiple dependent claim ") shall refer to such other claims in the alternative only." In this case, applicants use the term "and". The term "and" does not meet the requirement that the dependent claims are listed in the alternative.

### *Withdrawal of Claim Rejections Under 35 USC § 102 and 103*

Applicants' arguments filed 2-25-03 in paper no.6 overcome the following rejections:

Claim 1 under 35 U.S.C. 102(b) as being anticipated by Ganeshan (5,843,303).

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Claim 2 under 35 U.S.C. 103(a) as being unpatentable over Ganesan (5,843,303) or Sung et al.(5,207,891) as applied to claim 1 above, and further in view of Jones et al.(5,969,237).

Note: See comments in response to applicants' arguments below.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 stands rejected under 35 U.S.C. 102(b) as being anticipated by Sung et al.(5,207,891).

Applicants are claiming a process for disaggregating asphaltenes in petroleum oils and oil mixtures comprising mild heating.

The reference of Sung et al.(5,207,891) discloses gas oil containing asphaltenes are heated. See column 7, lines 10-15.

The disclosure of the same heating step would inherently disaggregate the asphaltenes and obtain a disaggregated composition with the same characteristics defined in applicants' claim 1. The same step is considered to produce the same product conversion.

Applicants' process is anticipated by the reference of Sung et al.(5,207,891) because the references disclose essentially the same heating step claimed by applicants.

*Response to Arguments*

Applicants' arguments filed 2-25-03 in paper no.6 have been fully considered.

Applicants' argument asserting that applicants' claimed invention differentiates over the reference of Ganeshan are persuasive. It is agreed that applicants' process involves keeping the asphaltene dissolved in the hydrocarbon whereas the Ganeshan process dissolves the asphaltene in a separate asphaltene phase.

Applicants' argument asserting that the use of SANS in the secondary reference of Jones differs from the use of SANS in applicants' claims because the prior art section of the reference is directed at using SANS to analyze asphaltenes dissolved in a deuterated solvent whereas the present invention employs SANS to analyze asphaltenes contained in a non-deuterated sample in the form of a hydrocarbon are persuasive in overcoming the rejection of the secondary reference of Jones.

Applicants' arguments against the reference of Sung are not persuasive in overcoming the pending rejection. Although the majority of the Sung patent is directed at employing chemical means to disaggregate asphaltenes, the reference still succeeds at disclosing the heating of a sample in the "absence" of additional chemical means for a specified time (column 7, lines 6-16). The steps of heating a sample (in the absence of chemical means) for a duration is considered to meet applicants' limitations in claim 1 because the heating would inherently accomplish the disaggregation of asphaltenes. In addition, the asphaltenes would remain dissolved in oil for the duration of the heating period, thereby meeting applicants' limitation of remaining soluble in the oil. Applicants' referral to the reference's disclosure of treating "one drop" of the previously heated mixture does not take away from the reference's teaching of

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heating an entire sample of asphaltene containing oil. It is maintained that the scale of a process is not patentably distinguishing. Since the Sung reference discloses heating an asphaltene containing oil (e.g. Bunker C oil), it meets the limitations of applicants' claim 1.

***Allowable Subject Matter***

Claims 2-10, 13, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 11-12 are allowable.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or suggest a process involving determining the presence of asphaltene aggregates by irradiating petroleum oils or refinery process streams with neutrons and determining small angle neutron scattering as defined in applicants' claim 2 in conjunction with a process that disaggregates asphaltenes in petroleum oils or refinery streams.

The prior art does not disclose or suggest a method of estimating the volume fraction of asphaltene aggregates contained in a petroleum oil or refinery process stream which employs the equation parameters defined in applicants' claim 11.

The prior art does not disclose or suggest applicants' "q" range in claims 3, 13, and 15. In addition, the prior art does not disclose applicants' equation fitting technique in claims 4-10.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Norton whose telephone number is 703-305-2667. The examiner can normally be reached on Monday through Thursday from 8:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.

N.N.

May 12, 2003

NADINE G. NORTON  
PRIMARY EXAMINER

